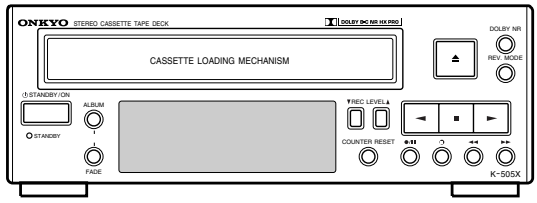
Ref. No . 3675
052001

ONKYO® SERVICE MANUAL

STEREO
CASETTE DECK
MODEL K-505TX



Silver models

SUPP,SUPT	230V AC,50Hz
SUDT	120V AC,60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBER APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®

IMAGINATIVE SIGHT & SOUND

SPECIFICATIONS

Track format
4-tracks, 2-channels

Erasing system
AC erase

Tape speed
4.8 cm/sec.

Wow and flutter
0.1 % (WRMS)
0.2 % (DIN)

Frequency response
Metal position tape
30 to 15,000 Hz ± 3 dB
High position tape
30 to 14,000 Hz ± 3 dB
Normal position tape
30 to 13,000 Hz ± 3 dB

Signal to noise ratio
- 54 dB (metal position tape, Dolby NR off)
- Noise reduction of 10 dB above 5 kHz and 5 dB at 1 kHz is possible with Dolby B NR.
- Noise reduction of 20 dB at 5 kHz is possible with Dolby C NR.

Input Jacks
LINE IN: 2
Input sensitivity: 80 mV
Input impedance: 50 kohms

Output Jacks
LINE OUT: 2
Standard output level: 500 mV
Output load impedance:
over 50 kohms

Motors
DC servo motor: 1

Heads
REC/PB: Special Hard Permalloy: 1
Erase head: Ferrite: 1

Power supply rating
AC 230-240 V, 50 Hz
AC 120 V, 60 Hz

Power consumption
12 W (230-240 V, 50 Hz)
14 W (120 V, 60 Hz)

Dimensions
205 mm × 76 mm × 278 mm
(Width × Height × Depth)

Weight
2.6 kg

Specifications and external appearance are subject to change without notice as a result of product improvement.

SERVICE PROCEDURES

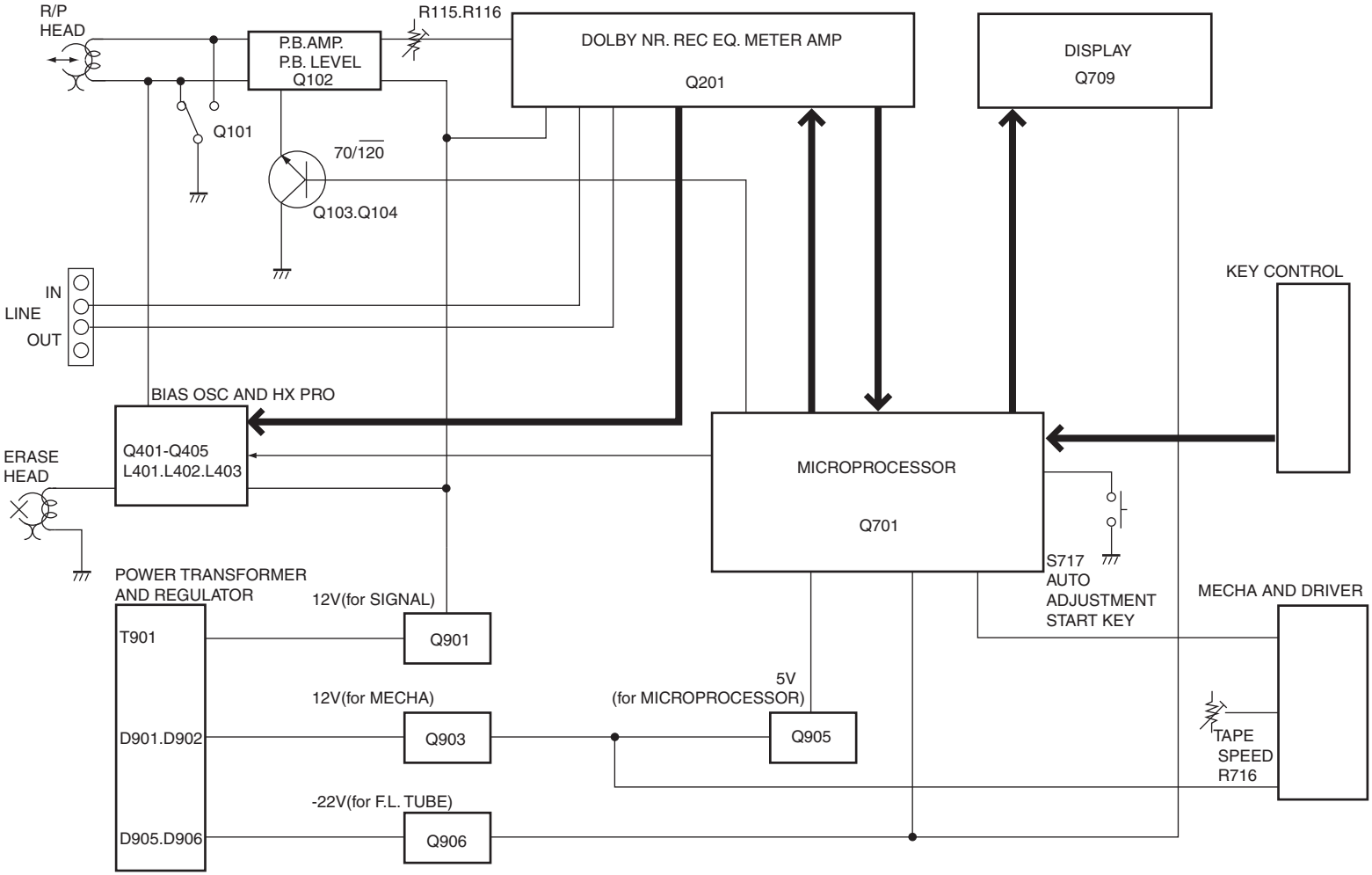
1. Replacing the fuse

This symbol located near the fuses indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

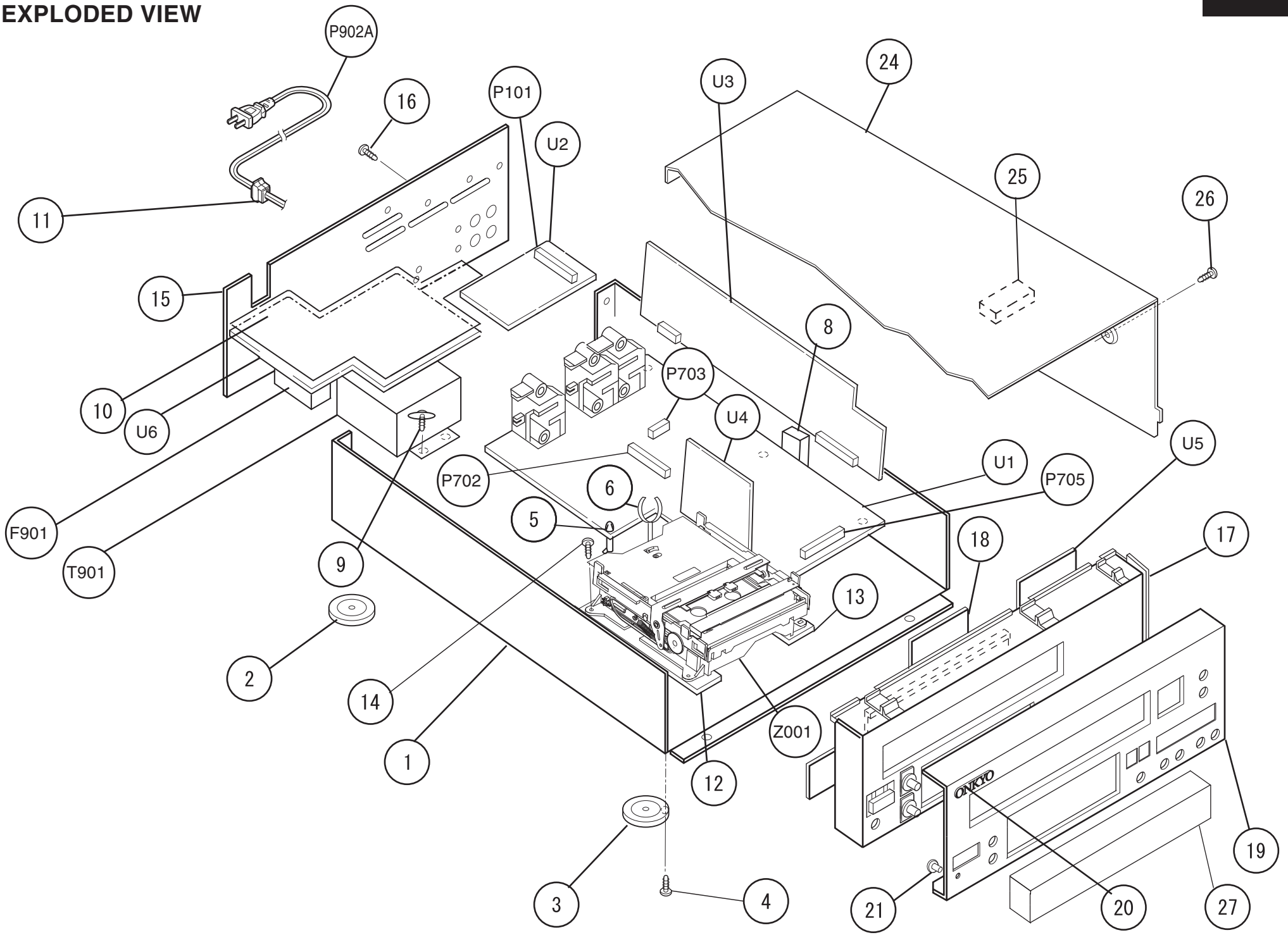
Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'untiliser que fusibles de meme type. Ce darnier est la qu le present symbol est appse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F901	252074	2A-SE-EAK,Fuse

BLOCK DIAGRAM



EXPLODED VIEW

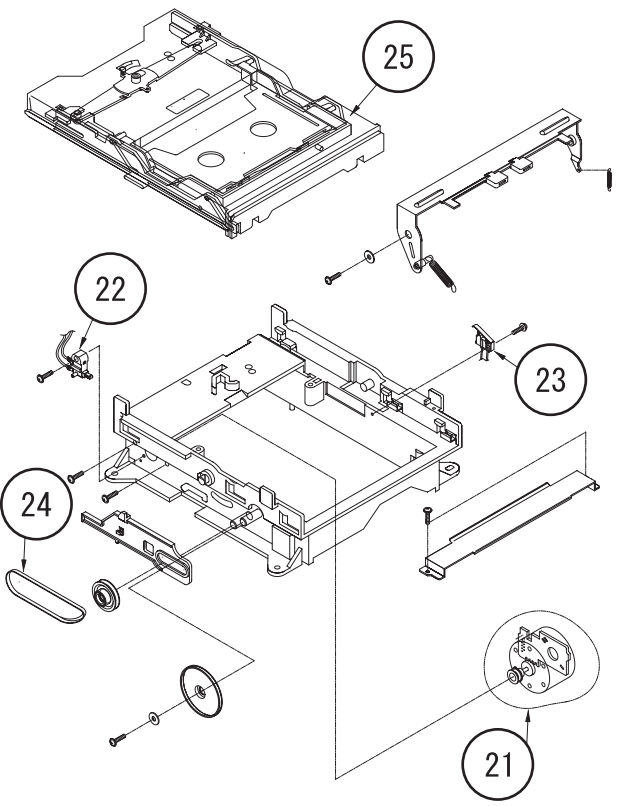


PARTS LIST

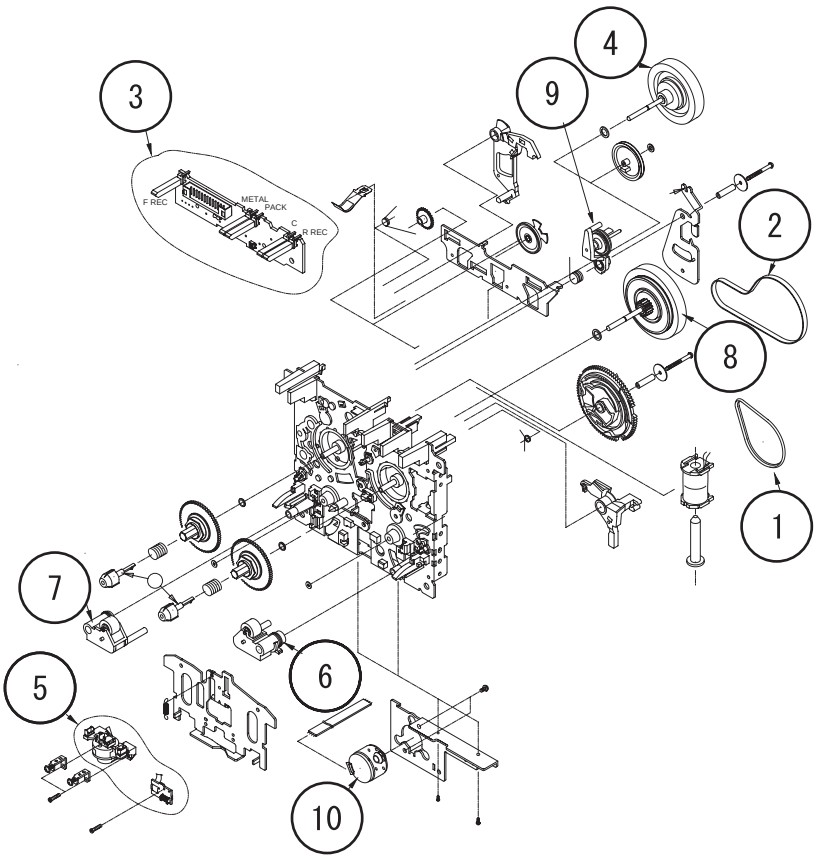
	REF.NO.	PART NO.	DESCRIPTION
	1	27100334A	Chassis
	2	27175323	Leg
	3	27175325	Leg
	4	838130088	3TTB+8B.Self tapping screw
	5	27190897	KGLS-3S.Holder
	6	27301394	HL-18-0.Clamp
	7	27191045	KGPS-3.5S.Holder
	8	28140020	4T × 10 × 40 Cushion
	9	830440069	4TTC+6C(BC).Self tapping screw
	10	27150407B	Shield plate
⚠	11	27300750	S-RELIEF #2271.Bushing cord
	12	27191137	ML Holder
	13	27191138	MR Holder
	14	833130100	3TTP+10P.Self tapping screw
	15	27122849	Rear panel
	16	838430088	3TTB+8B(BC).Self tapping screw
	17	27111214	Front bracket
	18	28141456	Cushion
	19	27212314	Front panel
	20	28135247Y	Badge
	21	28198864	Facet
	23	28191796A	Clear plate
	24	28184795	Cover
	25	28141470	Cushion
	26	838930088	3TTB+8B(UN).Self tapping screw
	27	28148476	(TRAY).Door
	P101	2009990659	NSAS-14P0919.Socket AS
	P702	20022392635A	NSAS-26P0918.Socket AS
	P703	2009990469	NSAS-10P0623.Socket AS
	P705	204319013	NCFC3-19013.F.F.C
⚠	P902A	253193HIT	AS-CEE. Power supply cord <P>
⚠		253277MIL	AS-UC-2#18.Poewr supply cord <D>
⚠	T901	2301298	NPT-1314P.Power transformer <P>
⚠		2301297	NPT-1314D.Power transformer <D>
	U1	1N281546-1A	NAAR-7146-1A.Main cuircuit PC board ass'y <D>
		1N281546-1B	NAAR-7146-1B,Main circuit PC board ass'y <P>
	U2	1N281547-1A	NAAF-7147-1A,Playback amp. PC board ass'y <D>
		1N281547-1B	NAAF-7147-1B,Playback amp. PC board ass'y <P>
	U3	1N281548-1A	NAAF-7148-1A,Dolby circuit PC board ass'y <D>
		1N281548-1B	NAAF-7148-1B,Dolby circuit PC board ass'y <P>
	U4	1N281549-1A	NAAF-7149-1A,Recording amp. PC board ass'y <D>
		1N281549-1B	NAAF-7149-1B,Recording amp. PC board ass'y <P>
	U5	1N281550-1A	NAPS-7150-1A,Power transformer PC board ass'y <D>
		1N281550-1B	NAPS-7150-1B,Power transformer PC board ass'y <P>
	U6	1N281551-1A	NADIS-7151-1A,Display circuit PC board ass'y <D>
		1N281551-1B	NADIS-7151-1B,Display circuit PC board ass'y <P>
	Z001	244247	CMAL2Z7.Deck mechanism
⚠	F901	252074	2A-SE-EAK,Fuse <European model only>

MECHANISM EXPLODED VIEW

Loading mechanism



Cassette mechanism



MECHANISM EXPLODED VIEW PARTS LIST

REF. NO	PART NO.	DESCRIPTION
1	FF18W-12	Belt F/R
2	FF19H-11	Main belt
3	F567-626	Control circuit PC board
4	FR24S-11	Flywheel ass'y
5	F513-870	Recording/Play head
6	F514-129	Pinch roller R
7	F514-130	Pinch roller L
8	F522-048	Clutch(Flywheel)
9	F522-052	Clutch
10	F525-327	Main motor
21	F564-640	Loading motor
22	UE15S-14	SPPB11,Micro switch
23	UE18P-21	SPPB2A,Leaf switch
24	FF19L-12	Loading belt
25	F527-078	Cassette holder

PARTS LIST

MAIN CIRCUIT PC BOARD(NAAR-7146-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q701	22241605R3	TMP87CH14F-3CV2
Q702	22241609R2	BR93LC46F-WE2
Q707	22240239	TA7291S
Q905	222780055	78M05HF
	Transistors	
Q601,Q703	2213354 or	2SA933S-R or
	2213355	2SA933S-S
Q704,Q710	221281 or	DTC114YS or
Q712,Q713	2213570	RN1207
Q705,Q706	2212853 or	2SB1068-K or
	2212855	2SB1068-U
Q708,Q711	2213090 or	DTA114YS or
	2213590	RN2207
Q901,Q903	2202724 or	2SB1569A-D or
	2202725	2SB1569A-E
Q902,Q904	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q906	2211504	2SA950-Y
Q907,Q908	2211705 or	2SD655-E or
	2211706	2SD655-F
	Diodes	
D701,D703	223163 or	1SS133 or
D706	223205	1SS270A
D702	224470472	MTZJ4.7B
D708,D910	224470562	MTZJ5.6B
D901,D902	22380035 or	GP104003E or
	22380260	RL1N4003
D903,D904	224471203	MTZJ12C
D905,D906	22380035 or	GP104003E or
	22380260	RL1N4003
D907	224471603	MTZJ16C
D908,D909	223163 or	1SS133 or
	223205	1SS270A
	Oscillator	
X701	3010190	CST8.00MTW
	Capacitors	
C701,C912	354780479	4.7μF,50V,Elect
C705	354741019	100μF,16V,Elect
C903,C904	374721044	ECQ-V50V-104J
C905	391954727	4700μF,25V,RA2
C906,C908	354742219	220μF,16V,Elect
C907	391941027	1000μF,16V,RA2
C909	391941027	1000μF,16V,RA2
C910	354762209	22μF,35V,Elect
C911	354781019	100μF,50V,Elect
C913	374721044	ECQ-V50V-104J
C914,C915	354741019	100μF,16V,Elect
C916	354741009	10μF,16V,Elect
	Resistors	
R716	5210258	N06HR1KBC,Trimming
R723,R728	49163272404	RM1/10IJ-2.7K*4,Array
R901,R902	453534794	⚠ 0.47Ω±5%,1/2W,Metal
R909,R910	443521004	⚠ 10Ω±5%,1/2W,Metal oxide
	Push switches	
S717	25035699	NPS-111-S662
	Sockets	
JL901B	25050269	NSCT-5P97
P102	2009990473	NSAS-12P0627
P705A	25051826	NSCT-19P1613
P601	2009990499	NSAS-6P0653
	Plugs	
P201A	25055806	NPLG-17P762
P202A	25055706	NPLG-10P662
P203A	25055701	NPLG-5P657
P204	25045305	NPJ-4PDBL164
P402A	25055709	NPLG-13P665
P701	25045330	NPJ-2PDBL184
P702A	25055157	NPLG-13P141
P703A	25055149	NPLG-5P133
P704B	25055444	NPLG-6P426
	Heat sink	
Q901A,Q903A	27160211-1	RAD-68B
	Pan head	
Q901B,Q903B	82143010	3P+10FN(BC)

PLAYBACK AMP.PC BOARD(NAAF-7147-1A/1B)

	ICs	
Q101	22240147	MPC1330HA
Q102	222905	MPC1228HA
	Transistors	
Q103,Q104	221299 or	DTC114TS or
	2213600	RN1211
	Capacitors	
C101,C102	374726814	ECQ-B50V-681J
C103,C104	391980227	2.2μF,50V,RA2
C105,C106	374728224	ECQ-B50V-822J
C107,C108	391941017	100μF,16V,RA2
C109,C110	354741009	10μF,16V,Elect
C111,C112	374721834	ECQ-B50V-183J
C113	391944717	47μF,16V,RA2
C114	354741009	10μF,16V,Elect
	Resistors	
R115,R116	5210265	N06HR50KBC,Trimming
R117	443521214	120Ω±5%,1/2W,Metal oxide
	Sockets	
P102,P103	2009990473	NSAS-12P0627
	Plugs	
P101A	25055136	NPLG-6P120

NOTE : THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK . REPLACE ONLY WITH PART NUMBER SPECIFIED.

DOLBY CIRCUIT PC BOARD(NAAF-7148-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q201	22241144R3HI	HA12169FB
	Transistors	
Q203,Q204	2213090 or	DTA114YS or
	2213590	RN2207
Q205,Q206	2211705 or	2SD655-E or
	2211706	2SD655-F
Q207	221281 or	DTC114YS or
	2213570	RN1207
	Diodes	
D201,D202	223163 or	1SS133 or
	223205	1SS270A
D203	224470472	MTZJ4.7B
	Coils	
L203,L204	233407	NMC-6079
	Capacitors	
C203-C208	374722224	ECQ-B50V-222J
C209-C214	374721044	ECQ-V50V-104J
C215,C216	354780109	1μF,50V,Elect
C217,C218	354780229	2.2μF,50V,Elect
C219,C220	354780109	1μF,50V,Elect
C221-C232	354741009	10μF,16V,Elect
C233-C237	354780479	4.7μF,50V,Elect
C238	354780109	1μF,50V,Elect
C239,C240	374721044	ECQ-V50V-104J
C241,C242	354741009	10μF,16V,Elect
C243	391941027	1000μF,16V,RA2
C246	374721534	ECQ-B50V-153J
C247	374723944	ECQ-V50V-394J
	Sockets	
P201	25051528	NSCT-17P1315
P202	25051235	NSCT-10P1025
P203	25051230	NSCT-5P1020
	Plugs	
P205	25055689	NPLG-2P645

RECORDING AMP. PC BOARD(NAAF-7149-1A/1B)

	IC	
Q401	222959	MPC1297CA
	Transistors	
Q402	221281 or	DTC114YS or
	2213570	RN1207
Q403	2211504	2SA950-Y
Q404,Q405	2201883	2SC1213-C
Q601,Q703	2213354 or	2SA933S-R or
	2213355	2SA933S-S
	Diode	
D601	223163 or	1SS133 or
	223205	1SS270A
	Coils	
L401,L402	231127	NCH-4183
L403	231215	NLO-2059
L405,L406	231085	NCH-2133

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C401-C408	371121034	MY92-50V-103J
C409,C410	370131014	APS100V-101J
C411,C412	370131214	APS100V-121J
C413	354741019	100μF,16V,Elect
C414,C419	354744709	47μF,16V,Elect
C415	354742219	220μF,16V,Elect
C416,C417	371124724	MY92-50V-472J
C418	371122234	MY92-50V-223J
C420	370131234	APS100V-123J
C422	354741009	10μF,16V,Elect
C427	371121834	MY92-50V-183J
	Resistors	
R410	443524704	47Ω±5%,1/2W,Metal oxide
R413,R719	443521004	10Ω±5%,1/2W,Metal oxide
	Sockets	
P103	2009990473	NSAS-12P0627
P402	25051238	NSCT-13P1028
	Plugs	
P401	25055233	NPLG-2P217
	Holders	
E811	27190608-1	(CRAMP) UA-0 V0

POWER TRANSFORMER PC BOARD(NAPS-7150-1A/1B)

	Capacitors	
C901,C902	374721044	ECQ-V50V-104J
	Sockets	
P903	25051637	NSCT-2P1424 <P>
	25051990	NSCT-2P1777 <D>
	Plugs	
P902	25055676	NPLG-2P632
	Fuse holders	
F901A,F901B	25052133 ⚠	NSCT-1P2031 <D>
	Wire holders	
JL901A	25051109	NSCT-5P896

DISPLAY CIRCUIT PC BOARD(NADIS-7151-1A/1B)

	FL tube	
Q709	212129	BJ254GK
	Diodes	
D704	223163 or	1SS133 or
	223205	1SS270A
D705	225338	SLR-332VR
D707	224470432	MTZJ4.3B
	Push switches	
S701-S716	25035699	NPS-111-S662
	Sockets	
P704A	2009990470	NSAS-12P0624
P705B	25051991	NSCT-19P1778

NOTE : <P> 230V model only

<D> 120V model only

ADJUSTMENT PROCEDURES

PRECAUTIONS

1. Before adjustment, clean the following parts with an alcohol moistened swab.
   *recording/playback head *erase head
   *pinch roller *capstan
2. Do not use magnetized screwdriver for adjustment.
3. Demagnetize recording/playback head with a head demagnetizer.

TEST EQUIPMENT/TOOL REQUIRED

Audio Oscillator
Digital frequency counter
Oscilloscope
Attenuator
AC voltmeter
Non-magnetic screwdriver
Test tapes
TCC-153 :10kHz, -15dB
MTT-111N :3kHz,-10dB
MTT-150 :Dolby level calibration
400Hz, tone 200nWb/m

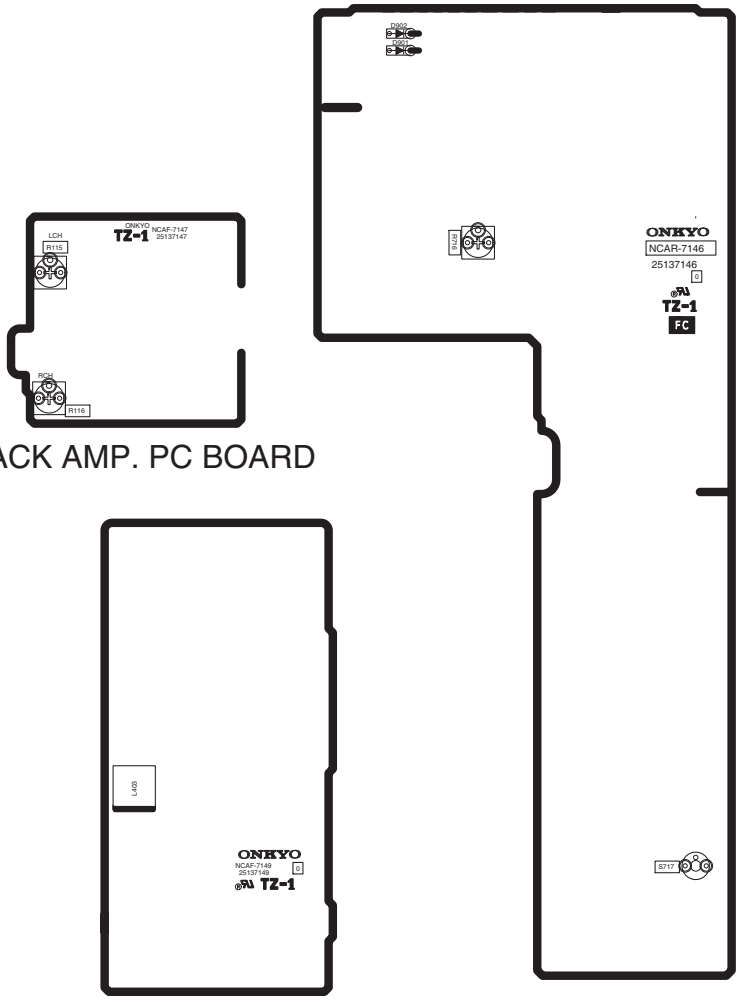
	Item	Connection of instrument	Line output level/freq.	Test tape	Mode	Output indicator	Adjustment point	Adjustment	Remarks
1	Tape speed	Frequency counter to P205 or LINE OUT terminal.		MTT-111N	PB	Frequency counter	R716	3010Hz	
2	Head azimuth	AC voltmeter & oscilloscope to P205		TCC-153	PB	AC voltmeter	Fig.1	Maximum level & same phase at channels L & R	Refer to Fig.2.
3	Playback level	AC voltmeter to P205		MTT-150	PB	AC voltmeter	R115 (L ch.) R116 (R ch.)	300mV	
4	Bias frequency	Frequency counter to lead wire of erase head		Normal tape	REC	Frequency counter	L403	85kHz	
5	Auto Rec adjustment			Normal tape	REC/PB			Auto(S717)	Push a auto-adjust button(S717)

Blank tapes

Normal	UD- Ⅰ C-90	PLAY torque ..... 30～70g/cm (Use the test tape TW-2231.)
High	UD- Ⅱ C-90	FF/REW torque ..... 80～180g/cm (Use the test tape TW-2111.)
Metal	XS C-60	Back tension ..... 2～6g/cm (Use the test tape TW-2111.)

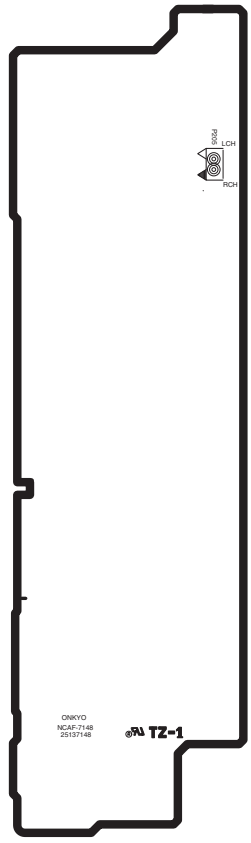
ADJUSTMENT POINT

MAIN CIRCUIT PC BOARD



PLAYBACK AMP. PC BOARD

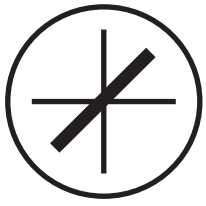
RECORDING AMP. PC BOARD



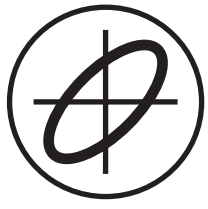
DOLBY CIRCUIT PC BOARD

PHASE CHART

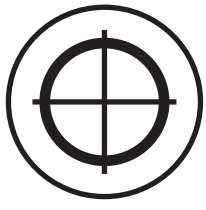
0 deg.



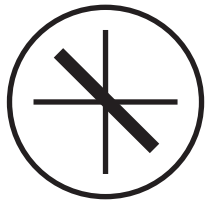
45 deg.



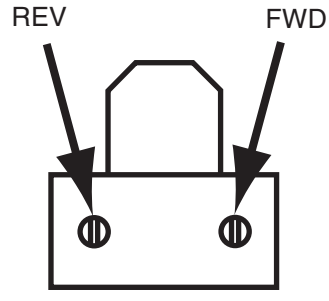
90 deg.



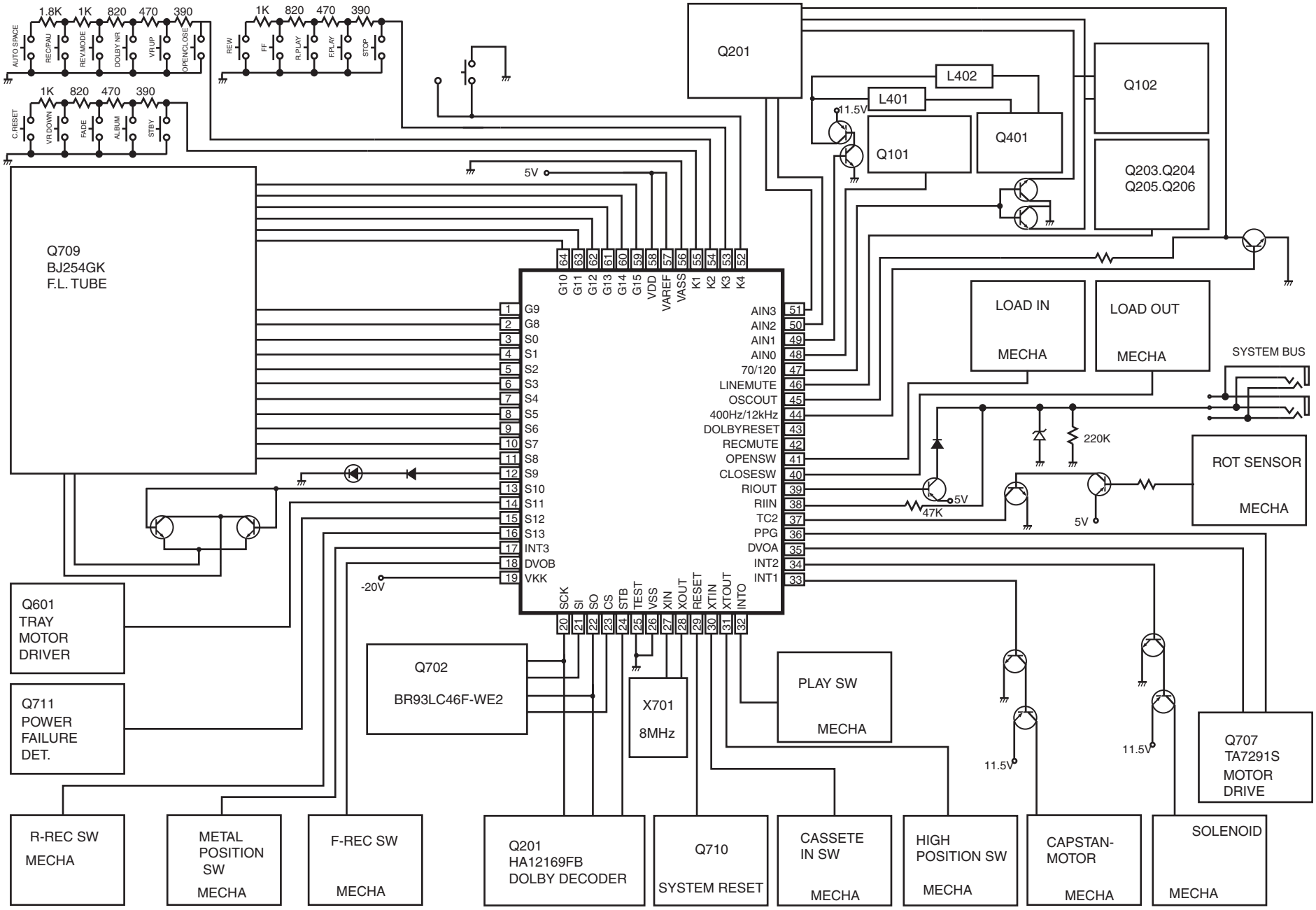
180 deg.



Rec/Playback head



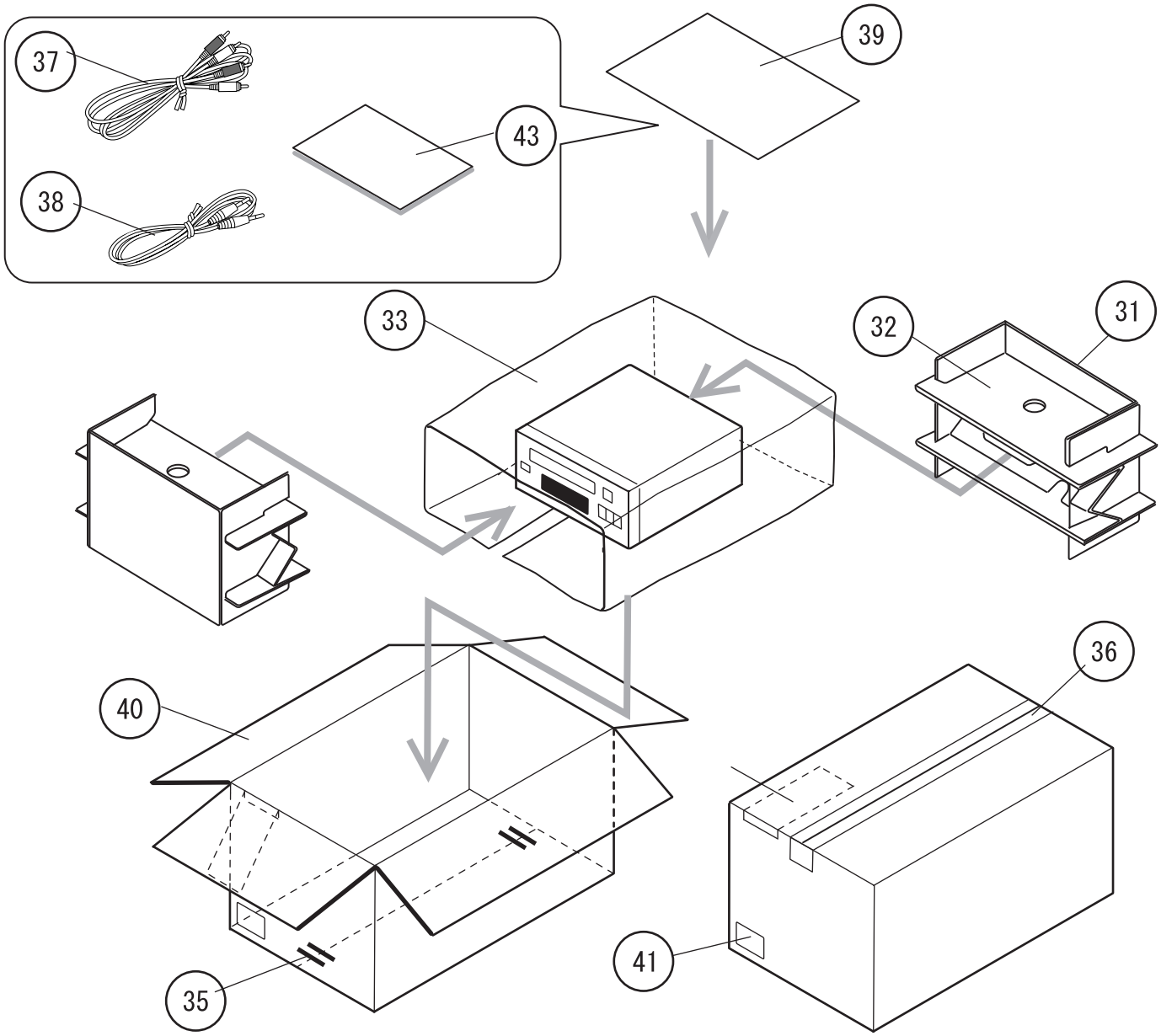
MAICROPROCESSOR CONNECTION DIAGRAM



MICROPROCESSOR TERMINAL DESCRIPTIONS

Pin No.	I/O	Terminal	Description	Pin No.	I/O	Terminal	Description
1	O	GRID2	Grid output pin	33	O	CAPSTAN	Capstan control Active high
2	O	GRID1		34	O	SOLENOID	Solenoid control Active high
3	O	SEG1	Segment output pin	35	O	OPEN	Door control.
4	O	SEG2		36	O	CLOSE	
5	O	SEG3		37	I	RSENSOR	Rotate sensor
6	O	SEG4		38	I	RIIN	System code input pin
7	O	SEG5		39	O	RIOUT	System cord output pin Active low
8	O	SEG6		40	I	CLOSESW	Door close detect. Active low
9	O	SEG7		41	I	OPENSW	Door open detect. Active low
10	O	SEG8		42	O	RECMUTE	REC Mute control. Active high
11	O	SEG9		43	O	DOLBYRESET	Dolby IC reset. Active low
12	O	STBYLED	Control of Standby LED Active high	44	O	400Hz/12kHz	Switched 400Hz/12kHz OSC port.
13	O	FILAMENT	Switched Filament Active high	45	O	OSCOUT	Osc output 400Hz/12kHz
14	I	DCHECK	Door open	46	O	LINEMUTE	Line muting. Active low
15	I	POFF	Power failure port.	47	O	70/120	Tape select port.
16	I	PRECINHSW	Cassette pack detect	48	O	REC/PB	Mode select port.
17	I	METALSW	Metal switch detect Low when metal	49	O	BIAS	Bias select Active high
18	I	FRECINHSW	Cassette pack detect	50	I	LEVELLCH	A/D Control for input level (Lch)
19	I	VKK	Power supply for display	51	I	LEVELRCH	A/D Control for input level (Rch)
20	O	CLOCK	Control for EEPROM	52	I	KEYIN4	A/D Control
21	I	SIN	Data input for EEPROM	53	I	KEYIN3	
22	O	SOUT	Data output for EEPROM	54	I	KEYIN2	
23	O	CS	Chip select for EEPROM Active high	55	I	KEYIN1	
24	O	STB	Standby port Active high	56		VASS	Ref. voltage for A/D comparater GND
25		TEST	Connect to GND	57		VAREF	Ref. voltage for A/D comparater +5V
26		VSS	Connect to GND	58		VDD	＋５Ｖ
27	I	XIN	Clock OSC (8kHz)	59	O	GRID8	Grid output pin.
28	O	XOUT	Clock OSC (8kHz)	60	O	GRID7	
29	I	RESET	System reset	61	O	GRID6	
30	I	PACKSW	Cassette detect switch	62	O	GRID5	
31	I	HIGHSW	High switch detect. High when highposition	63	O	GRID4	
32	I	PLAYSW	Play switch detect. Low when playback	64	O	GRID3	

PACKING VIEW



REF.NO.	PART NO.	DESCRIPTION
31	29091888	Pad A
32	29091889	Pad B
33	29095835	0.515*650*550.Sheet
35	282321	Staple
36	29110141	PP Tape
37	2010376	Pin cord AS
38	2010375	3.5-MINI PLUG.Cord AS
39	29100180	T0.05*D240*W250.Bag
40	29053741	Carton
41	29362845	EAN Label
43	29343076	E(K505TX).Instruction manual
	29343077	U3FSI(K505TX).Instruction manual <P>
	29343079	CT(K505TX).Instruction manual <D>
	29343078	U3GSwD(K505TX).Instruction manual <P>

<P> : European model only
<D> : Asian model only

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